THE INTERACTIONS OF GENERALS AND COMMANDERS, AND THEIR EFFECTS ON OPERATIONS

by
Andrew J. Baldwin

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ABSTRACT

This study examines an overarching research question: **to what extent do military leaders' personalities and command relations affect strategy and operations?** The method used for this study is a single-case qualitative case study applied to an historical exemplar of the relationship between Generals Eisenhower and Spaatz during the Combined Bomber Offensive (CBO) for the purpose of initial development of theory for General Officer (GO) professional interpersonal conduct. The reason for choosing this particular case is that this relationship occurred amidst one of the most turbulent strategic times for GOs and fostered a great deal of cooperation amongst a large group of GOs. The case study hypotheses were disproved as strategic decisions were made from an analytic standpoint and not borne out of personality conflicts or blind spots due to personal schema. It is concluded that the conduct of GOs can radically alter strategy and it is of utmost importance that officers conduct themselves in a manner divorced from any personal conflicts for the best allocation of combat forces.

Research Study Advisor: Professor Sarah Clark

Research Study Reviewers: Dr. Benjamin Runkle

Dr. Kevin Woods

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Table of Contents

List of Figures

INTRODUCTION

History has long examined the Generals from within its annals; Generals are the face and the exemplar of their armies. When examining these individuals, we often look to their personalities and how they led their forces – but rarely are their communications with other General Officers (GOs), or Flag Officers, to accomplish a broader strategy examined for lessons learned. When history does look at these interactions it is often to underscore a sense of drama and urgency in the historical narrative or to highlight a blunder of some sort – be it an intelligence failure, strategic blunder, or even outright failure. A paramount facet of these discussions should synthesize the discussion of individual generals into an academic discussion of the strategic communications between generals and how that ultimately affects the operations at hand.

How does the interaction between GOs affect operations? How much does a military organization reflect the personality of its leader? How easily can a viable strategy be overlooked by a blind spot in the strategic vision of a superior commander? This study attempts to examine the foundational issue from these questions by studying the interactions of GOs and how the personal aspects of leaders in the positions of Flag Officers can change the course of Theater-wide strategy. The scope of this study is designed to be a catalyst to bring the discussion of GO conduct into the academic sphere.

This study will focus primarily on the relationship between Generals Eisenhower and Spaatz during the latter half of World War II in Europe; this was a pivotal time for the Allied forces with the air war against the Luftwaffe at a peak and preparations for Operation OVERLORD – the crux of Allied strategy to break the Reich. General Spaatz provided General Eisenhower with a plan, several times, to target the German oil supply

in order to ultimately bring the German war machine to a screeching halt; Eisenhower chose not to use that plan, but why?

LITERATURE REVIEW

Amongst the literature of military leadership, much of it is focused on the concept of fostering personal leadership skills, identifying personality traits of leaders, and potential predictors of effective leaders. While this literature is highly applicable to military training of junior officers, there is little to extrapolate to Flag Officers who have, typically, at least 20 years in the service and plenty of those years in command positions.

There are resources within the branches of service geared toward teaching commanders how to interact with each other and their superiors (i.e. the Air Force hosts Squadron Commanders' Courses for newly appointed officers for taking command of a unit) yet those resources do not make their way into the larger sphere of academia. If those materials are made available for research, they are largely white papers published from a branch's post-graduate institution (i.e. the Army War College in Carlyle, PA or the Air Force Air University in Maxwell AFB, AL) written by Field Grade Officers (FGOs; these are officers in the grades of O-4 through O-6). Aside from those internal resources, the military resources available for leadership conduct are from the first half of the 20th century and are virtually archaic for application to the modern military.

Another aspect is that, while there are numerous volumes written about Generals and their campaigns, these biographies have not resulted in any significant academic discussion of how GOs should communicate and how their inter-command relationships can impact operations. Therefore, the literature examined in this study is designed to

create a modern framework for a discussion of GO interaction and understanding their impact on operations by utilizing the military literature encouraging personal leadership skill development and juxtaposing that with material from the business world regarding communications from and conduct of corporate executives. The rational for the fusion stems from the idea that, within the construct of military culture, GOs are essentially executive officers that have upper management positions and are responsible for fostering beneficial organizational climates and both generation of and overseeing execution of broad strategy for the organization. While it will take some extrapolation across corporate/military cultures, the concept of executive communications can translate into the military cultural construct.

Military Leadership

The Psychology of Military Leadership written by L.A. Pennington, Lt Col (Ret) Romeyn Hough Jr., and H.W. Case was published in 1943 and it does discuss the conduct of a leader. The title seems misleading as it does not delve into psychological theory; rather, this text was absolutely written and directed toward junior officers in order to give better insight into what it takes to be a leader in the military and the mindset that comes along with it. However, Pennington et al. do make a point that directly relates to the idea behind this study. Their comment regarding tact should be maintained at any level of leadership – especially at the highest echelons. They state in Chapter 5 that tact "…should be possessed in a high degree by the military leader. It can be cultivated[1]."

[1] Pennington, L. E., Romeyn Beck Hough, and H. W. Case. 1943. *The Psychology of Military Leadership*. New York: Prentice-Hall.

Distilling the point, interpersonal skills and the ability to converse diplomatically can alleviate even the potential strains of a reprimand.

Pennington et al. are not alone in the discussion of personality traits of leaders. Judith L. Johnson and William R. Hill of Regent University produced a study in 2009 titled *Personality Traits and Military Leadership* wherein they wanted to identify personality traits of effective and ineffective military leaders. They did this by polling officers in the Army National Guard and asking them to rate leaders in the NEO-PI-R scale – a standard personality trait matrix[2]. According to one of their conclusions (below) the more effective officers are more team oriented.

> The more effective officers were also viewed as more trusting, straightforward, and altruistic (facets of Agreeableness) than the ineffective leader. It is of interest to note that effective officers are viewed as "high" with regard to many facets of Agreeableness, but not "very high" except in the facet of Agreeableness known as compliance. *This suggests that military leaders viewed as effective are more likely to defer to others and to cooperate rather than compete*[3]. [Emphasis added]

Bartone, Snook, and Tremble Jr. in their study, *Cognitive and Personality Predictors of Leader Performance in West Point Cadets,* utilized internal measures from West Point used to measure leadership potential in cadets to develop predictors of successful leaders as both upperclassmen at West Point but also as fully commissioned Officers in the Army post-graduation. One of their most prominent findings was related to what they called Social Judgement, defined as, "…"discretionary problem solving in

[2] Johnson, Judith L. and William R. Hill. 2009. "Personality Traits and Military Leadership." *Individual Differences Research* 7 (1): 1-13.

[3] Johnson, Judith L. and William R. Hill. 2009. "Personality Traits and Military Leadership." *Individual Differences Research* 7 (1): 1-13.

ill-defined social domains" (p. 25). Here, the ability to exercise sound judgment in regard to self, social, and organizational relations is central to effective leadership[4]."

A result of their study was that social judgment was "a significant independent predictor of leader performance" and that, while important for junior officers to learn, "social judgment skills become even more important as leaders move up the organizational hierarchy and must manage increasingly complex and ambiguous problems that involve people. Such would seem to be the case in a large people-based organization like the U.S. Army[5]." More concisely, the ability to handle social situations is a paramount skill for an effective leader. Their results also seem to fall in congruity with the claims of Pennington et al. mentioned above.

While *The Psychology of Military Leadership* was published in the middle of World War II, the truths that come out in the text still ring true today; however, the whole book is not so relatable to all levels. Much of this text is directed to the new officer who is learning the ways and culture of the military. Despite that, there are a couple points that are made, and the following principles do even appear to relate well to the suggestion from Johnson and Hill with some slight exception:

> 8. Never go over the head of the immediately superior officer. It sometimes may be very hard on a young officer when, for example, an adjutant issues an order that the officer does not believe is right and for the good of the service. He may be tempted to appeal to the commanding officer. This should never be done until the matter has been discussed with the adjutant and until his permission has been secured to consider the question with the commanding officer.
>
> 9. Be tolerant of superiors' shortcomings and foibles. No one is perfect. At times, senior officers may, for instance, appear to be short-tempered. This may be true for several reasons. It may be the burden of responsibility that they are

[4] Bartone, Paul T., Scott A. Snook, and Trueman R. Tremble. 2002. "Cognitive and Personality Predictors of Leader Performance in West Point Cadets." *Military Psychology* 14 (4): 321-338. doi:10.1207/S15327876MP1404_6. http://www.tandfonline.com/doi/abs/10.1207/S15327876MP1404_6.
[5] Ibid

> carrying, the strain of prolonged effort, or merely " the privileged irascibility of senior officers." In any case, a grudge should not be carried and no words of resentment should be spoken[6].

While the first principle boils down to the idea of using the chain of command, it does play into the ideas of how leaders should interact. This idea, while imperative for junior officers to learn and take to heart, should not take exception to GOs. No matter how high in rank a leader may be, there is no need to jump the chain of command until absolutely necessary. The second point made by Pennington et al., however, can very easily be misconstrued into allowing leaders to be crass with subordinates just because of their position. I do not believe this is the intent of the passage, but rather to highlight that upper leaders are under egregious amounts of stress and could unduly snap at a subordinate. A major factor for the relevance of this statement lies in the examination of communications between GOs. If GOs are under large amounts of stress, an officer like General Eisenhower, one of only few five-star Generals, would face pressures from his subordinate Generals as well as the War Department and the U.S. President. From that point of view, it is important to discern if any crassness present in communications stemmed from actual disdain or merely a bad day.

While discussing assessments of five-star Generals, Theodore and Donna Kinni authored *No Substitute for Victory: Lessons in Strategy and Leadership from General Douglas MacArthur.* One of the more salient points made in their examination of General MacArthur was his appreciation of innovation and those of his commanders who strove to find new and better ways of accomplishing the mission. The following excerpt highlights how MacArthur sought to utilize new technologies in the air domain as air

[6] Pennington, L. E., Romeyn Beck Hough, and H. W. Case. 1943. *The Psychology of Military Leadership*. New York: Prentice-Hall.

combat came into its own during the 1940s. “Rapid innovation in air force methods and equipment enabled the highly successful “hit 'em where they ain't” strategy. Air commander George Kenney became a favorite of MacArthur because of his willingness to innovate[7].”

While this text does not get into direct communications, it does discuss the fact that General MacArthur favored General Kenney for innovating, and he paid attention to when his subordinates had ideas that may depart from his own preconceived notions. An important facet of leadership, MacArthur was able to see past his own experiences to accept others.

Dr. Paul Lieber enters this discussion in his paper, *Rethinking Special Operations Leadership: Process, Persuasion, Pre-Existing, and Personality.* He defines a personal viewpoint, or schema, as:

> “…pre-existing notions that combine for an individual’s perceptions on the world around [him/her,] Schema formation, in theory, is a fairly straightforward concept. Individuals combine life experiences—for better or worse—to create schemata of the world around them. These schemata serve as pre-existing frames for which all future messaging/behaviors will find a home[8].”

Understandably, the concept of schemata is important to comprehending how GOs react and respond to the rigors of leadership, but these texts still do not build directly into a discussion of how GOs, both superior and subordinate Generals, interact and what the impacts are on operations. As such, these texts will prove to be a foundation

[7] Kinni, Theodore and Donna Kinni. 2005. *No Substitute for Victory: Lessons in Strategy and Leadership from General Douglas MacArthur*. 1st ed. Concordville, Pa.: Pearson Education Inc.

[8] Lieber, Paul S. 2016. *Rethinking Special Operations Leadership*. MacDill AFB, FL: Joint Special Operations University, Center for Special Operations Studies and Research, JSOU Press.

of basic conduct of an officer and a General that will frame this studies discussion of GOs communications and conduct.

Still amongst the discussion of characteristics of effective military leaders, Lieber does discuss the personality of leaders by claiming that successful leaders will typically display extroverted tendencies and are naturally predisposed to utilizing communications for problem solving[9]. His claim falls in line with the previously mentioned findings of Johnson and Hill. From this, it appears there is some agreement on the demeanor of effective leaders. The literature suggests a profile of an effective leader as demonstrating extroverted tendencies, establishing open communication within the organization, remaining open to new ideas, and keeping a team-oriented mindset.

One text that echoes the sentiment of open communication is *Generalship: Its Diseases and Their Cure* by Major General J.F.C. Fuller. Maj Gen Fuller was a British commander and his publication was released in 1933. His examples are largely founded in the 18th and 19th centuries – many from Napoleon, various British conflicts, and the American Civil War. His discussion of personal conduct may still be relevant today, but it is not within the scope of the study as he does not discuss much about GOs interacting. His examples come from the 'old world' where Generals were few and their command was far more absolute. In that respect, his writings are not exactly the most relevant today but there are still kernels of truth in his text. He discusses that communication of a General is imperative to build a proper will to fight within the force and that, "…without the contact of the commander with his men, whether of subordinate commander or of the general-in-chief, such enthusiasm cannot be roused and such heroism cannot be

[9] Lieber, Paul S. 2016. *Rethinking Special Operations Leadership*. MacDill AFB, FL: Joint Special Operations University, Center for Special Operations Studies and Research, JSOU Press.

created[10].” When Maj Gen Fuller mentions “enthusiasm” and “heroism” he speaks from a pre-World War II idea that war should be glorious and is a place for men to display heroism and honor. In that regard, his ideas are far antiquated to modern day’s understanding that war is brutal and hellish. Yet, where his text is antiquated in that regard, Maj Gen Fuller does discuss – however briefly – the fact that Generals should maintain contact and communication with both subordinate commanders and superior commanders.

Political Leadership

While the number of texts discussing political leadership is vast, the text that proved the most relevant to this study was *Leaders in Conflict* by Stephen Dyson. His book discusses the relationship of President George W. Bush and his Secretary of Defense (SECDEF) Donald Rumsfeld during the conflict in Iraq. The reason for the inclusion of this text is the relationship between the President and the SECDEF is similar to the one used in the study between General Eisenhower (a five-star) and General Spaatz (a three-star and later a four-star); both groups display relations between a high-level superior and subordinate commander and the subsequent impact of their relationship on operations.

In his book, Dyson tells the history of Bush’s administration regarding Iraq. Bush and Rumsfeld were very different individuals and their personalities clashed too much to

[10] Fuller, J. F. C. 1878-1966. 1933. *Generalship, its Diseases and their Cure; a Study of the Personal Factor in Command*. England:. http://catalog.hathitrust.org/Record/006538964.

make operations effective. Ultimately, Bush fired Rumsfeld as SECDEF and ordered the surge into Iraq. Playing into the ideas from Dr. Lieber as discussed earlier, Dyson makes the statement:

> [L]eadership itself matters. The choice for war, and the course of post-Saddam Iraq, was shaped by the worldviews and administrative styles of the US president and the secretary of [defense]. Other individuals occupying these roles, faced with the same situations, would have made different choices. Individuals shaped the history of the war[11].

This claim serves to echo Lieber's schema and the fact that personalities of leaders do matter to operations. Operations and organizations are not personality-agnostic, in that decisions will be made certain ways regardless of who is in command, but rather are more intertwined with the personality and conduct of its leader. Dyson goes on to state, "It is the interaction between a leader's style and their circumstances that holds the key to success, however. Leadership is only part of the equation producing policy, and it follows then that the key driver of success is not the leader's style considered in isolation but rather the fit between leader and circumstance[12]." This brings up another facet to the discussion: not only are the leaders important but the circumstances they find themselves in matter as well.

Business Leadership

The aspect of business leadership does not initially seem to blend with the unique characteristics of military culture at a superficial level, but when dwelt upon critically, a

[11] Dyson, Stephen Benedict. 2014. *Leaders in Conflict*. 1. publ. ed. Manchester [u.a.]: Manchester Univ. Press.

[12] Dyson, Stephen Benedict. 2014. *Leaders in Conflict*. 1. publ. ed. Manchester [u.a.]: Manchester Univ. Press.

business executive has very similar responsibilities as Generals. Executives are the heads of their organizations and, as such, drive the culture, communication habits, and direction of the organization. Examining the broader discussion of CEO interactions and communication can be extrapolated into the culture of the military with some light translation.

Firstly, like with military leadership, there are studies done to determine personality traits of executives and, in a study conducted by Palaiou and Furnham, they ask the question in their title: *Are Bosses Unique? Personality Facet Differences Between CEOs and Staff In Five Work Sectors*. They posit that bosses will score differently than non-executive employees in a Five Factor Method (FFM) personality test. Their methods were quantitative in nature, so they naturally lack the rich, personality-driven data from personal interviews, but their research does help in identifying basic personality traits to better understand what makes a successful CEO. Similar to some of the military predictors and examinations, Palaiou and Furnham did confirm their hypotheses that demonstrated CEOs scored higher on extraversion and assertiveness; a conclusion being that, at that tier of leadership, it is expected that extroversion is needed to better engage with the organization's employees[13]. Their conclusion serves to support other claims by those engaged in the discussion of military leadership.

Oreg and Berson go into the next stage of business leadership: they examine the impact a CEO has on an organization and how the executive has influence over the command decisions for a business. Their study *The Impact of Top Leaders'*

[13] Palaiou, Kat and Adrian Furnham. 2014. "Are Bosses Unique? Personality Facet Differences between CEOs and Staff in Five Work Sectors." *Consulting Psychology Journal: Practice and Research* 66 (3): 173-196. doi:10.1037/cpb0000010. https://search.proquest.com/docview/1563996628.

Personalities: The Processes Through Which Organizations Become Reflections of Their Leaders looks at a similar theory mentioned by Jeffery Thomas in his doctoral dissertation about the Attraction-Selection-Attrition (ASA) theory,

> [Proposed] by Schneider (1987)…[the theory] states that the individuals that make up an organization are similar in that they were attracted to, selected by, and are retained or choose to stay in an organization. Therefore, there is likely to be homogeneity of personality traits within the Army. Further, ASA suggests that the degree to which the individual "fits" in the organization depends on how well his or her personality fits with the modal personality of the organization (Schneider, Smith, Taylor, & Fleenor, 1998)[14].

Oreg and Berson put this concept to the test and display a chart outlining the flow of how a leader's personality impacts operations. By this figure, Oreg and Berson posit that a leaders' personality traits and their values affect, what they term, 'Mediating Factors' – essentially how that leader operates and the decisions they make for an organization. That, subsequently, ends in some kind of effect on organizational performance.

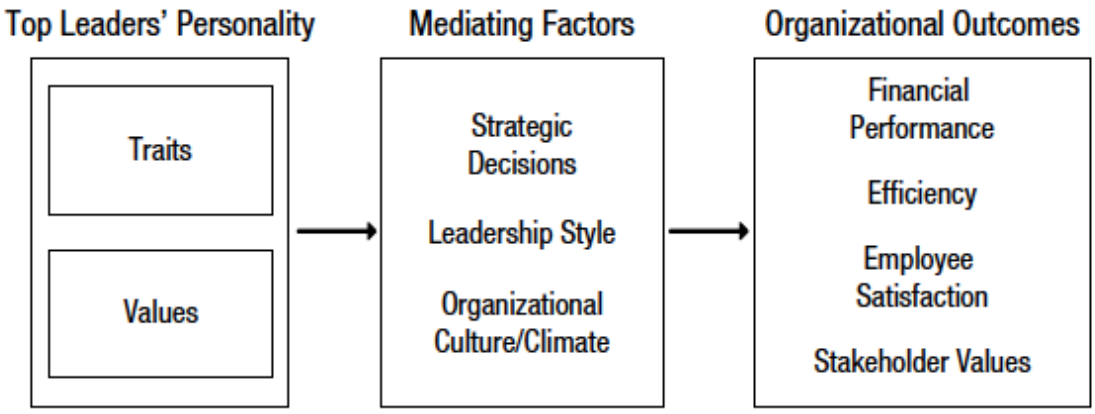

Fig. 1. Diagram of the mediated effects of leader personality on organizational outcomes.

Figure 1

[14] Thomas, Jeffrey L. 1999. "Personality and Motivational Predictors of Military Leadership Assessment in the United States Army Reserve Officer Training Corps. ProQuest Dissertations Publishing.

Their work seems to be supported by another study the author pair did together on school principals and their impact on school operations. They extrapolate the impact of that study to business executives and demonstrate similar effects[15]. The salient conclusion of this study is that an organization does begin to "…reflect the personality of their leaders[16]."

In their study for the Global Business and Management Research journal, Saad, Sudin, and Shamsuddin of Malaysia concluded via quantitative methods using several tests – including the NEO-PI-R and the Five Factor Method – that,

> [Leadership] styles, personality attributes and employee communication are significantly correlated to employee engagement. [Leadership]…personality attributes… and employee communication… have positive association with employee engagement. This study also found that personality attributes affects more than employee communication and leadership styles. Furthermore, this study found that the higher positions of the employees are more engaged than the lower position employees[17].

Like many of the other studies done on leader personalities, they followed similar methods and it does make their study fairly derivative as far as their conclusions; however, the unique aspect of their study is the application of the leaders' personalities and leadership styles and the impact on the workforce.

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[15] Oreg, Shaul and Yair Berson. 2018. "The Impact of Top Leaders' Personalities: The Processes through which Organizations Become Reflections of their Leaders." *Current Directions in Psychological Science* 27 (4): 241-248. doi:10.1177/0963721417748397. https://journals.sagepub.com/doi/full/10.1177/0963721417748397.

[16] Oreg, Shaul and Yair Berson. 2018. "The Impact of Top Leaders' Personalities: The Processes through which Organizations Become Reflections of their Leaders." *Current Directions in Psychological Science* 27 (4): 241-248. doi:10.1177/0963721417748397. https://journals.sagepub.com/doi/full/10.1177/0963721417748397.

[17] Saad, Zuliawati Mohamed, Sudin Suhaimi, and Norlina Shamsuddin. 2018. "The Influence of Leadership Style, Personality Attributes and Employee Communication on Employee Engagement." *Global Business and Management Research* 10 (3): 743. https://search.proquest.com/docview/2159615884.

As far as relating business to the world of the military, Akansu, Cicon, Ferris, and Sun demonstrate a potential silver lining to the ill-tempered executive. Just as Pennington et al. mention that a leader may be sour at times because of stress, Akansu et al. attempt to explain a cause behind that:

> Specifically, if a CEO shows disgust or anger during a media interview, we show a subsequent increase in the firm's profit margin, sales growth, and return on assets. This happens because CEOs who are in negative moods are more likely to engage in detail oriented and substantive decision making processes to improve their situations (Mackie and Worth [1991], Schwarz and Bless [1991])[18].

The connection here is the reasoning that if a CEO who is focusing more heavily on detail-oriented decision is likely to show disgust or anger in an interview, it is possible the same pattern applies to Generals. A General who snaps at one of his subordinates for reasons other than discipline may very well be spending a great deal of time and effort on tactical and minute strategical decisions, thereby causing great amounts of stress.

Literature Summary

There is a significant amount of literature on personality trait examinations of military leaders, but the majority of it focuses on personal growth and fostering leadership traits in junior officers. Rarely does the literature discuss the conduct of GOs, let alone the discourse between commanding officers. In an attempt to fill that gap, this study utilized literature from the business industry that discusses conduct and communications from CEOs; CEOs function at a roughly equivalent organizational

[18] Akansu, Ali, James Cicon, Stephen P. Ferris, and Yanjia Sun. 2017. "Firm Performance in the Face of Fear: How CEO Moods Affect Firm Performance." *Journal of Behavioral Finance* 18 (4): 373-389. doi:10.1080/15427560.2017.1338704. http://www.tandfonline.com/doi/abs/10.1080/15427560.2017.1338704.

echelon as GOs and, after examination, could be extrapolated to application for GO conduct. Further research is required specifically into the conduct and command relations of GOs in order to better facilitate a discussion of how GOs interact impacts operations.

RESEARCH QUESTION

The main purpose of this paper is to examine the relationship between GOs personalities, interpersonal relations with their superior and subordinate commanders, and the impacts of those on operations. This study poses the following research question: **to what extent do military leaders' personalities and command relations affect strategy and operations?** The expected result of the study is that the personalities and schema of individual commanders do impact their ability to accept external strategic suggestions or strategies from other commanders.

The hypothesis for this case study: Eisenhower became target fixated on ball-bearing factories and similar targets for the CBO and, as a result, ignored Spaatz's urging to focus the air campaign against the German oil industry. In this case study, the expected result is to see that Eisenhower, indeed, became target fixated and ignored Spaatz because it did not fit within his own agenda; Eisenhower allowed a personal bias to create a conflict between himself and one of his subordinate commanders.

The reason this was chosen as an exemplar is because of its prominence. World War II is arguably one of the last times Generals were so deeply involved in tactical decisions to the degree that the Allied commanders were. In that sense, the tension that the high stakes of the CBO created added on top of the stressors on General Eisenhower

to balance the air forces with the land and sea forces lends itself to a situation ripe for potentially poor communications and fairly immediate impact on tactical operations.

For the sake of falsifiability, there are multiple possible null hypotheses. It is possible that 1) Eisenhower was receiving direction from the Allied political leaders (i.e. President Roosevelt, the U.S. War Department, Prime Minister Churchill, etc.) to focus on the production of mechanical components; 2) although Spaatz's strategy was effective after D-Day, Eisenhower possessed intelligence or analysis that Spaatz was not privy to that made targeting oil inefficient. Another explanation could be outside of their command relationship altogether: 3) the sheer factor of feasibility. Meaning that if the Allies did not possess the means to strike the oil industry effectively, it would not prove a viable strategy.

There is also a known and accepted intrinsic bias to this study as it is focused primarily within the construct of the U.S. military, as it pertains to the exemplar and extrapolated discussion. It would prove a benefit for further study to apply the findings of this study to other militaries to determine viability of more global application.

Method

The method used to conduct the study is primarily a single-case qualitative case study applied to an historical exemplar of the relationship between Generals Eisenhower and Spaatz during the Combined Bomber Offensive (CBO) for the purpose of initial development of theory for GO professional interpersonal conduct. The framework established by fusing literature from the various fields above takes into account the lack

of academic conversation on the communications of military commanders amongst themselves and the lack of academic literature defining proper conduct for GOs.

While individual personalities are not the primary focus of this study, they do factor in to individual approaches to interpersonal and command decisions made directly relating to strategy and tactical choices. Utilizing the concepts laid forth in the literature of conduct of military officers and CEOs, this study will examine the interactions of Generals Eisenhower and Spaatz to discover if any interpersonal conflicts hindered strategic development.

This study was built around a basic process-tracing in order to develop a theory for the research question. The main goal for this case study is to discover the causal mechanisms behind why Eisenhower refused to enact Spaatz's oil plan until June 1944. Elaborating on the hypothesis, the test is to determine if personal biases prevented the implementation of an effective strategy.

Sources

This study, being focused on an historical event, the sources for the study will be historical in nature. Primary sources are the most preferable and will be utilized when able; however, during research it was discovered that many written communications between the Generals are still classified and therefore unavailable for unclassified publication. The primary sources that are available are published reports from the U.S. Army Air Force (USAAF)/ U.S. Air Force (USAF). Secondary sources are a large portion of the data collected to recount the events of the command decisions of the CBO.

While not the most ideal, under the aforementioned conditions with classification concerns, the use of secondary sources will suffice.

As a note for further study: once the written communications are declassified, it would be prudent to examine them and add to this study's analysis in the case that any conclusions may change.

DATA

The Beginning of the CBO

1943 was a major crescendo in the Allied war effort: that year included the height of the air war for both the Allied and Axis, Allied preparation for an invasion of the European mainland, and massive changes in battlefield technologies. For the Allies, the air war in Europe focused heavily on strategic bombing as an attempt to hamstring the German war production effort. This manifested itself in two very different strategies between the American and British forces: the Americans, with the Eighth Air Force (8 AF) and Fifteenth Air Force (15 AF), preferred daylight precision bombing and the British Bomber Command preferred nighttime area bombing. Allied leaders were able to leverage these preferences to create a round-the-clock bombing schedule – this was the foundation of the Combined Bomber Offensive.

The British philosophy revolved around area bombing to break the will of the people. Their concept was to drop massive numbers of large munitions across city-wide areas to cause damage to both military and civilian infrastructure. By doing so, supposedly materials and time would be pulled away from frontline production to rebuilding – thereby causing a production deficit. The American concept, on the other

hand, believed that targeting specific industries or production facilities would create a shortage of critical materials. Russell points out the disparity between American and British schools of thought:

> Maj. Gen. Carl A. Spaatz, commander of the Eighth Air Force, and Brig. Gen. Ira C. Eaker… disagreed vehemently with the British. They argued that the only way to achieve air superiority over Europe was to force the Luftwaffe to fight in the daytime. After the Luftwaffe had been defeated, the heavy bombers could cripple the enemy by destroying the electrical power network, petroleum industry, and other strategic targets listed…[19]

Unfortunately, during 1943, the CBO was not as successful as hoped. Theoretically, the targeting of ball bearing factories, one of the initial priority targets, should have played into slowing or halting production of a wide variety of war machines from ranging from tanks to aircraft and many other machines. However, Germany proved it was able to easily recover from factory losses.

Another point of failure for the CBO was the massive attrition rates for Allied aircrews. Associated with the bomber attrition rates was a distinct lack of fighter escort coverage. Without proper fighter escort, the bombers – despite being armed with multiple gunner positions – were virtually helpless against the agile, well-armed German fighter aircraft. Since the nature of the CBO put Allied aircrews deep within enemy airspace, bombers were, more often than not, forced to operate unescorted to their target area. Without long-range fighters, the Allies attempted a phased approach to coverage that largely failed. On top of that, when the fighters were actually escorting bomber formations, the fighter pilots were forced to stay beside the bombers until they were

[19] Russell, Edward T. 1999. *Leaping the Atlantic Wall : Army Air Forces Campaigns in Western Europe, 1942-1945*. The U.S. Army Air Forces in World War II. Washington, D.C.: Air Force History and Museums Program. 1-2

engaged by the enemy; there was no allowance for proactive actions to take the fight to the Luftwaffe whenever able at this point in the war. CBO operations continued in this manner until the late spring of 1944[20].

General Dwight D. Eisenhower

Of Eisenhower's character, he once said "I know only one method of operation…To be as honest with others as I am with myself[21]." Accounts of Eisenhower's actions and character from both Ambrose and the diary of Captain Butcher seem to reflect this. This does not mean, however, that he was meek. Eisenhower demonstrated great resolve as a commander in dealing with the various sources of stress and pressure to execute an elaborate grand strategy. Not only was Eisenhower responsible to push out orders to his subordinate Generals, he also answered to the Joint Chiefs of Staff (JCS) and "…was still responsible to the CCS [Combined Chiefs of Staff] and, beyond that body, to Churchill and Roosevelt[22]."

One factor that stands out is that an American General is answerable to the British as well as his American leadership. "[A] principal source of criticism [of Eisenhower] …is the British. One of Eisenhower's difficult tasks was to arbitrate between the imperious demands of the Field Marshall Montgomery and the necessities of his own

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[20] Keeney, L. Douglas. 2012. *The Pointblank Directive - Three Generals and the Untold Story of the Daring Plan that Saved D-Day*. Oxford: Osprey Publishing Ltd. https://ebookcentral.proquest.com/lib/[SITE_ID]/detail.action?docID=1667839.

[21] Ambrose, Stephen E. 1970. The Supreme Commander; the War Years of General Dwight D. Eisenhower. Garden City, N.Y.: Doubleday., 325

[22] Ambrose, Stephen E. 1970. The Supreme Commander; the War Years of General Dwight D. Eisenhower. Garden City, N.Y.: Doubleday., 370

American field commanders[23].” On top of Montgomery, Eisenhower also had to balance the application of air power between his American commanders (like Spaatz, Eaker, Doolittle, and Arnold) and the British commanders of the RAF like Air Chief Marshall (ACM) Tedder and Leigh-Mallory, which was no small feat in itself. Captain Butcher wrote in his diary on 03 March 1944, “Just when Ike thinks he has the problem of air command licked, as he put it today, “someone else’s feelings are hurt and I have another problem to settle.”[24]”

General Carl A. Spaatz

General Carl Spaatz worked closely with Eisenhower during the war as Spaatz commanded the Mediterranean Air Forces and later was commander of the Supreme Headquarters Allied Expeditionary Forces (SHEAF); he “…possessed a good measure of the fourth necessary ingredient of a successful general--the ability to inspire trust in both superiors and [subordinates,]” and he “also earned Eisenhower's esteem[25].”

> From June 1942 through May 1945, the two worked hand in hand, becoming close friends… However, the friendship did not interfere with Eisenhower's judgment. In June 1943, he wrote of Spaatz, "I have an impression he is not tough and hard enough personally to meet the full requirements of his high position."[26]”
> Two years later, however, Eisenhower claimed,
>
> "[No] one could tell him that Spaatz was not the best operational air man in the world, [although] he was not a paper man, couldn't write what he wanted,

[23] Childs, Marquis W. 1958. Eisenhower: Captive Hero; a Critical Study of the General and the President. New York: Harcourt, Brace., 82
[24] Butcher, Harry C. 1901. 1946. My Three Years with Eisenhower; the Personal Diary of Captain Harry C. Butcher, USNR, Naval Aide to General Eisenhower, 1942 to 1945. United States:., 498
[25] Davis, Richard G. 1997. "Gen Carl Spaatz and D Day." *Airpower Journal* 11 (4): 20. https://search.proquest.com/docview/217803355.
[26] Davis, Richard G. 1997. "Gen Carl Spaatz and D Day." *Airpower Journal* 11 (4): 20. https://search.proquest.com/docview/217803355.

and couldn't conduct himself at a conference, but he had the utmost respect from everybody, ground and air, in the theater[27]. "

General Ira Eaker, in an article for the Air Force Magazine, wrote a piece on General Spaatz. In it he described a conversation between Spaatz and Eisenhower that helps paint a picture of their relationship.

> "Early in the campaign, Eisenhower called Spaatz to a fateful conference. He said, "Tooey, my morning report shows you have 400 planes, while the British have 300 and the French show 100. Rommel has only 500 planes by today's intelligence estimate, yet every day he clobbers us. How come?"
>
> Spaatz said, "Ike, your figures are about right. When they hit me they outnumber me five to four; when they hit the British, they have the advantage five to three. The Germans have overwhelming superiority over the French, five to one. Our tactics have been all wrong. The airplane is a poor defensive weapon. Airpower must always be used on the offensive. The first mission of the tactical air force is to win air superiority over the battlefield. Only then can it be diverted to secondary roles like observation, directing artillery fire, shooting up tanks, or defending headquarters.
>
> Eisenhower said, "Tooey, I get the point. Hereafter, as long as I am in command, you have operational control of all the airplanes made available to me by our government or any Allied nation."[28]

What this helps illustrate is the manner of the working relationship between Eisenhower and Spaatz. In this conversation, Eisenhower displays trust in the judgement of Spaatz's assessment of the air war and use of air power and gives Spaatz authority over the air forces. There is no enmity nor personality conflict present and, as such, demonstrates a healthy professional understanding between the two generals.

Strategic Discussions

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[27] Davis, Richard G. 1997. "Gen Carl Spaatz and D Day." *Airpower Journal* 11 (4): 20. https://search.proquest.com/docview/217803355.

[28] Eaker, Ira C. 1974. "Gen. Carl a. Spaatz, Usaf: June 28 1891-July 14 1974." *Air Force Magazine* 57 (9): 43. http://search.ebscohost.com/login.aspx?direct=true&db=ahl&AN=45913257&site=ehost-live&scope=site.

General Spaatz urged General Eisenhower to attack the German oil industry in late 1943 and 1944[29]. "[General Spaatz's] feelings were supported by information derived from Ultra intelligence, indicating that the Germans were indeed beginning to suffer critical shortages[30]." The Ultra program was used to decrypt the German Enigma code and resulted in valuable, timely intelligence to Allied commanders. General Spaatz submitted a plan to bomb synthetic oil plants; he claimed that the Germans would use the Luftwaffe for defense – that would only accelerate the destruction of German planes and oil. [31]

> In comparing the effect of oil vs. transportation, Spaatz insists the weight of attack required to deal with a large marshaling yard is about the same as that required for a synthetic-oil plant and the target areas are relatively the same size. Furthermore, only fourteen synthetic oil plants produce eighty percent of all German synthetic gasoline and oil, whereas fourteen marshaling yards comprise only a fraction of the German railway system[.][32]"

In fact, Spaatz was not the only commander to submit a Course of Action (COA) to Eisenhower; Richard Davis notes that Air Chief Marshal (ACM) Trafford Leigh-Mallory and ACM Tedder together submitted a transportation plan that proposed the targeting of railyards to limit the movement of German support. This transportation plan was vigorously opposed by Spaatz, whom said that the assault on railways could

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[29] Parramore, Woody W. 2012. "The Combined Bomber Offensive's Destruction of Germany's Refined-Fuels Industry." *Air & Space Power Journal* 26 (2): 72. https://search.proquest.com/docview/1115581072., 76-78

[30] Biddle, Tami Davis. 1995. "British and American Approaches to Strategic Bombing: Their Origins and Implementation in the World War II Combined Bomber Offensive." *Journal of Strategic Studies* 18 (1): 91-144. doi:10.1080/01402399508437581. https://search.proquest.com/docview/1307028540., 123

[31] Butcher, Harry C. 1901. 1946. My Three Years with Eisenhower; the Personal Diary of Captain Harry C. Butcher, USNR, Naval Aide to General Eisenhower, 1942 to 1945. United States:., 507

[32] Butcher, Harry C. 1901. 1946. My Three Years with Eisenhower; the Personal Diary of Captain Harry C. Butcher, USNR, Naval Aide to General Eisenhower, 1942 to 1945. United States:., 507

"…reduce by thirty per cent the present efficiency of the enemy railroads, which was hardly sufficient[33]."

Bogardus states that, "Eisenhower chose the transportation plan on 25 March because it offered measurable results; the effects of the oil plan, although logical, could not be verified with existing Allied intelligence[34]." Those measurable results really translated into the effect on the landing for Operation OVERLORD. Eisenhower believed that any positive effects on the oil industry would still take too long to fully reach the beachhead to limit the capabilities of the defenses along the Atlantic Wall[35].

To that claim, there is contradictory evidence: Captain Butcher – who was an executive officer to Eisenhower from 1942-1945 – notes in his diary that Eisenhower decided on the transportation plan on 30 March 1944 and that Spaatz' oil plan was assessed to take around six months before it would "…seriously affect German military operations."[36] For the reason of a primary source as opposed to a secondary source, the timeline – although similar – and assessment of the oil plan from Butcher's account takes precedence.

Not to mention, there was already a standing air strategy that was published before Pearl Harbor, "…designated AWPD–1, for an aerial offensive against Germany.

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[33] Ambrose, Stephen E. 1970. The Supreme Commander; the War Years of General Dwight D. Eisenhower. Garden City, N.Y.: Doubleday., 372

[34] Davis, Richard G. 1997. "Gen Carl Spaatz and D Day." *Airpower Journal* 11 (4): 20. https://search.proquest.com/docview/217803355.

[35] Bogardus, Anneke-Jans. 1994. "Prelude to Operation Overlord: The Air Campaign." *Military Review* 74 (3): 64. http://search.ebscohost.com/login.aspx?direct=true&db=f5h&AN=9605072734&site=ehost-live&scope=site.

[36] Butcher, Harry C. 1901. 1946. My Three Years with Eisenhower; the Personal Diary of Captain Harry C. Butcher, USNR, Naval Aide to General Eisenhower, 1942 to 1945. United States:., 509

Prepared by the Air War Plans Division in July 1941 at the request of President Franklin D. Roosevelt, the plan's first priority was to attain air superiority by destroying the German aircraft industry and operational fighters. The second priority was to destroy the German electrical power grid, transportation network, and oil industry[37]." By definition, assaulting the oil industry is the last place in the list.

Not accepting the reluctance to target oil, on 18 May 1943, Gen Spaatz ordered the 15 AF to assault the marshalling yards at Ploesti knowing full well that the bombs would hit the oil refineries surrounding the yards. One year later – refusing to accept Eisenhower's decision – on 05 May 1944, the 15 AF once again struck Ploesti – both of these were done before formal announcement of oil as a priority target.[38] Davis also tells of some tensions that came out of the strike on Ploesti:

> Spaatz went to Eisenhower that evening and found the supreme commander upset with the AAF. First, in spite of the decision of 25 March in favor of transportation, the Eighth had yet to bomb a single transportation target, with the invasion only seven weeks distant.[39]

Spaatz's decisions were swiftly vindicated by the German response and the Enigma messages that were intercepted after the attack on Ploesti; defensive resources were hurriedly transferred to protect the synthetic oil plants[40].

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[37] Russell, Edward T. 1999. *Leaping the Atlantic Wall : Army Air Forces Campaigns in Western Europe, 1942-1945*. The U.S. Army Air Forces in World War II. Washington, D.C.: Air Force History and Museums Program.

[38] Carter, Kit C. and Robert Mueller. 1975. *The Army Air Forces in World War II : Combat Chronology, 1941-1945*. United States:. http://catalog.hathitrust.org/Record/000720860., 136

[39] Davis, Richard G. 1997. "Gen Carl Spaatz and D Day." *Airpower Journal* 11 (4): 20. https://search.proquest.com/docview/217803355.

[40] Davis, Richard G. 1997. "Gen Carl Spaatz and D Day." *Airpower Journal* 11 (4): 20. https://search.proquest.com/docview/217803355.

After borderline insubordinate operations, D-Day, and continued pressure from Spaatz, on 08 June 1944 the order was given to make German oil the priority target of the CBO. Once the 8 AF and 15 AF, predominantly the 15 AF, shifted focus to targeting German oil facilities, there was a clear restriction in German ability to field resources. (For more details on why Spaatz pressed this idea see "APPENDIX A: Why Target German Oil and Power?")

Limiting External Factors to Targeting Oil and Power Before 1944

Strategic Assessment of Spaatz's Oil Plan

When examining the causes for not targeting German oil until mid-1944, there are more than just personality disputes, but command decisions are a major factor. On the American side, General Eisenhower decided to pursue the transportation plan submitted by the British on 30 March 1944; it was chosen "…because the oil plan [would] not seriously affect German military operations for six months, too long for immediate benefit to OVERLORD[41]. What Eisenhower did not anticipate was the German ability to rebuild and repurpose their infrastructure. Roads and railways were rebuilt almost immediately to resume shipping of goods; if a factory was leveled, not only would it be rebuilt in weeks or even days, but in the meantime it was relatively simple for another factory to change what they produce to make up for the loss of a ball bearing facility – thereby still meeting production requirements. General Spaatz attempted to have oil moved up as a top priority of the CBO in March 1944, but Eisenhower denied his

[41] Butcher, Harry C. 1901. 1946. My Three Years with Eisenhower; the Personal Diary of Captain Harry C. Butcher, USNR, Naval Aide to General Eisenhower, 1942 to 1945. United States:., 509

request[42], demonstrating that, "Those segments of the Allied apparatus that did approach an accurate understanding were obstructed in translating it into an effective policy[43].

Analysts for the Supreme Headquarters Allied Expeditionary Force (SHAEF) found some holes in Spaatz's plan, however. In a history written by David Eisenhower – the General's grandson – he claims that targets that were south and southeast of Berlin were too dangerous to strike and, moreover, "…several of the primary targets listed were synthetic oil plants in the Ruhr, by-passed earlier because of smoke, haze, heavy ground-based anti-aircraft fire and other problems not solved by the P-47 and P-51[44]."

The RAF and ACM Leigh-Mallory

From the British side, the Royal Air Force (RAF) refused to abandon the idea of area bombing. The RAF did break from area bombing for a short time to aid the American daylight bombings by targeting the oil refineries in the Ruhr region, but the British Bomber Command did not switch away from area bombing in total in favor of precision bombing.

ACM Leigh-Mallory, whom Spaatz was staunchly opposed to, was a source of frustration for Spaatz and his oil plan. Unfortunately for Spaatz, Leigh-Mallory was described in Davis' book as such:

> "[A] man of driving egoism," with a habitually haughty manner and "an assertive temperament." Even his apologists admit that he "was so typically

[42] MacArthur, Charles W. 1992. *Operations Analysis in the US Army Eighth Air Force in World War II*. History of Mathematics. 2. print. ed. Vol. 4. Providence, R.I: American Mathematical Soc. u.a., 202-203
[43] Mierzejewski, Alfred C. 1988. *The Collapse of the German War Economy, 1944-1945 : Allied Air Power and the German National Railway*. Chapel Hill: University of North Carolina Press., 179
[44] Eisenhower, David. 1986. *Eisenhower at War, 1943-1945*. New York: Random House., 155

English, [and] sometimes tactless, almost pompous in appearance and naïve in character without any finesse…[45]"

He and Spaatz were almost diametrically opposed to one another – evident by their personalities – and that made their command relationship very difficult and even acrid[46]. Davis even reports part of an entry of Spaatz's diary: "Am not sure whether L-M [Leigh-Mallory] has proper conception of air role[47]."

Technological Limitation

In conjunction with the British reservations against precision bombing is an issue of technology. From the account of ACM Arthur Harris, a British air commander, he notes that the economic targeteers overlooked the fact that it was not until 1944 that sufficient navigational aids existed to facilitate accurate enough night bombing of specific targets. "An important factor, which the economic experts never grasped, was that it was only in the closing stages of the war that we had navigational aids such as would enable us to identify and hit isolated targets as small as the average large factory[48].

A major limiting factor was the lack of sufficient fight escort for the Allied bomber formations. Prior to the late spring of 1944, fighter cover for bomber formations was attempted in phases from England to the border of Germany. From the German

[45] Davis, Richard G. 1992. *Carl A. Spaatz and the Air War in Europe*. [Smithsonian History of Aviation Series]. Washington: Distributed by Smithsonian Institution Press., 310

[46] Davis, Richard G. 1992. *Carl A. Spaatz and the Air War in Europe*. [Smithsonian History of Aviation Series]. Washington: Distributed by Smithsonian Institution Press., 312

[47] Davis, Richard G. 1992. *Carl A. Spaatz and the Air War in Europe*. [Smithsonian History of Aviation Series]. Washington: Distributed by Smithsonian Institution Press., 312

[48] Harris, Arthur. 2015. *Bomber Offensive : Marshal of the R.A.F Sir Arthur Harris*. Havertown: Pen and Sword. https://ebookcentral.proquest.com/lib/[SITE_ID]/detail.action?docID=1718460., 223

border to the target area, the bombers had to fly defenseless. Often, though, the bombers would fly unescorted because the fighter 'relay' was inherently flawed. Without modern communication systems the fighters struggled to meet up with the bombers – the fighter squadrons could have taken off too early or late, or accidentally ended up a few miles in the wrong direction – causing the bomber formations to fly through occupied Europe airspace without fighter cover. The ultimate fix to this issue was the P-51D: with its Rolls Royce Merlin engine, additional on-board fuel tank behind the cockpit, and two extra drop tanks it was able to fly at the same altitude as the bombers and had the range to escort the formations all the way from England to Berlin and back. Unfortunately, the P-51D did not see widespread dissemination to the various Fighter Squadrons (FSs) and Fighter Groups (FGs) until mid-1944.

TABLE 41.—*Monthly German production and imports of finished oil products, January 1944–March 1945* [1]

[In thousand metric tons]

Year and month	Synthetic production		Domestic refining of crude oil	Production in occupied territories	Imports	Total
	Hydrogenation and Fischer-Tropsch process	Other synthetic production				
1944:						
January	336	162	175	48	179	900
February	306	172	160	48	200	886
March	341	201	191	49	186	968
April	348	153	157	48	104	810
May	285	151	170	47	81	734
June	145	153	129	44	40	511
July	86	143	115	38	56	438
August	47	137	134	16	[2] 11	345
September	26	126	113	5	11	281
October	38	117	124	3	34	316
November	78	107	105	10	37	337
December	56	108	108	9	22	303
1945:						
January	37	[3]	[3]	[3]	[3]	[3]
February	13	[3]	[3]	[3]	[3]	[3]
March	12	[3]	[3]	[3]	[3]	[3]

[1] As a result of discrepancies in the original German sources, Table 41 is not entirely consistent with Tables 38, 39, or 42.
[2] The Russians occupied Ploesti on August 22, 1944.
[3] Not available.

Sources: Produktion der Hydrier und Synthese Werke in 1000 moto, chart prepared by Dr. Butefisch, May 1945; *Statistische Schnellberichte zur Kriegsproduktion*, Planungsamt, Ministry for Armament and War Production.

Figure 2

CBO's Effect on German Oil and Power from June 1944

The combat chronology of the Army Air Forces during World War II provides significant insight into how many missions were conducted by each Numbered Air Force (NAF) on particular days. The following is a sample of some of the sorties conducted against German oil targets: 08 June 1944: Gen Spaatz announces oil is now the top priority for the CBO. Strikes on oil targets, predominantly by the 15 AF, occurred on 09, 10, 11, 14 June[49], demonstrating the clear ability of the Allies to leverage their bomber forces against the oil targets.

Once the CBO shifted its focus to bombing the German oil industry, there was a distinct drop in production and severe impact on the German ability to field aircraft and other ground vehicles. Table 41 from the *Strategic Bombing Survey* (Figure 3) details the production drop over the course of 1944-45[50]. There is a clear trend towards decreased levels of production across the board as time progressed from 1944; however, most notably is the column showing the production of hydrogenation and Fischer-Tropsch oil. Production remained fairly consistent until June 1944 – when General Spaatz finally made the formal declaration that German oil would be a prime target for the CBO – when production drops off significantly. Milward also has tables that demonstrate the drop in production: From April to July 1944, production of aviation fuel dropped from 175,000 tons to only 29,000 tons – an 84.5% drop. In July 1944, the daily production from 17-25 July dropped from 2,307 tons to the lowest point, on 21 July, of just 120 tons only to

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[49] Carter, Kit C. and Robert Mueller. 1975. *The Army Air Forces in World War II : Combat Chronology, 1941-1945*. United States:. http://catalog.hathitrust.org/Record/000720860., 334, 346-347,365-369

[50] United States Strategic Bombing Survey. 1945. *The Effects of Strategic Bombing on the German War Economy*. Its Reports. European War. 3. Washington: Over-all Economic Effects Division., 78

equalize at 417 tons – end to end a decrease of 82%.[51] These numbers demonstrate the vicious effect targeting the German oil industry had on German capacity and reserves. "According to a decrypted Luftwaffe message of 5 June 1944, fuel supplies had become so low that the air arm had to tap its strategic reserve and that it had made fuel available only for training; bomber, fighter, and ground attack; and some transport flights[52].

DISCUSSION

The Generals

Much of the data for this study came from the operations of the CBO, but there are salient moments that highlight the interactions and command relationship of Eisenhower and Spaatz. More importantly, the operational data serves as a measure for the impact of the relationship between the two Generals. As discussed in the Literature Review, much of the discussion in the military is about the fostering of personal leadership skills for junior officers. Examining the pressure Spaatz put on his superior commander, who happened to be a five-star General, there is a demonstrable propensity towards open and forward communication between the two men. Both GOs demonstrated a clear understanding of communication and command decisiveness; both were direct, yet frank in their communications and, consequently, built a close working relationship.

When Spaatz disagreed with the decision of Eisenhower to focus on transportation, he took matters into his own hands and altered operations to fit his own

[51] Milward, Alan S. 1965. *The German Economy at War*. London: University of London, Athlone Press., 120

[52] Parramore, Woody W. 2012. "The Combined Bomber Offensive's Destruction of Germany's Refined-Fuels Industry." *Air & Space Power Journal* 26 (2): 72. https://search.proquest.com/docview/1115581072., 79-80

agenda. While this was borderline insubordinate (it was not only due to semantics and what his 'official' target was at Ploesti being the 'marshaling yards'), he turned out to be correct in his assessment, but he was certainly willing to take a major risk to prove it. This does not so much play into the direct interactions of GOs, but it is a result of a disagreement of one party on a strategic decision; this drastic shift in operations is certainly related to the diagram from Oreg and Berson where Spaatz's Values lead to Strategic Decisions and ultimate changed the vector of operations.

Eisenhower, on the other hand, was operating at an even higher level than Spaatz. He had to concern himself with not only the Air Component, but with the operations on land and sea as well. Eisenhower had oversight on all Allied operations in Europe and it is clear that he did not necessarily become target fixated on transportation and ball bearing factory targets. His decisions were balanced against the needs of the other components.

External Factors

The most prominent external factor to the delay in targeting German oil was actually a legitimate assessment of Spaatz's plan. Butcher annotates part of the conversation of the commanders regarding the oil and transportation plans.

> [ACM Tedder] states that no one can question that the oil plan, in view of the proved ability of the U.S. Strategic Air Force to carry our precision attacks deep in Germany, would ultimately have grave effects on the German war effort. It is difficult, however, to see evidence to support the view that it could be expected to take real effect in time for OVERLORD…[53]

[53] Butcher, Harry C. 1901. 1946. My Three Years with Eisenhower; the Personal Diary of Captain Harry C. Butcher, USNR, Naval Aide to General Eisenhower, 1942 to 1945. United States:., 508

The salient detail here is that none of the commanders doubted that the oil plan would work. The deciding factor for Eisenhower was the timeline. This decision was made in March 1944 – only three months before the largest amphibious assault in history. The oil plan was assessed to not produce significant impact to German operations for six months. That would put the return on investment of combat resources to three months *after* the invasion. Eisenhower's concern was to provide every possible advantage to the invasion force to help them establish a foothold on the beaches of Normandy.

CONCLUSIONS

After examining the conduct of Generals Eisenhower and Spaatz integrated with the operational events, the evidence provides some insight into an answer for the research question. There are multiple outcomes from the study.

Conclusion 1: The Research Question

This case study does demonstrate that GOs personalities and command relations can significantly affect strategy development, however, it must not be a main variable. Through examination of the conduct and impact of Generals Eisenhower and Spaatz during the CBO, these men demonstrated clearly that by remaining open to suggestions, GOs can communicate effectively and, as a result, serves to confirm findings from within the field of business leadership that leaders' personalities do impact strategy development and operations.

Both commanders demonstrated principles of communication and leadership that are also prevalent in the existing military leadership literature. This does imply that even the decades-old sources are still somewhat relevant. Yet, there is still a blatant lack of a

modern discussion and picture of conduct for GOs in the realm of academia. The inclusion of the discussion within the school of business regarding the conduct and communications of CEOs does help bridge that gap but does not fulfill it.

Ultimately, the conclusion for the research question is that while leaders' personalities and command relations are able to impact strategy development, they are not a sole driving factor in strategy development. However, this conclusion is from just this single-case case study; it does, however, serve to initiate academic discussion regarding how GOs conduct themselves professionally.

Conclusion 2: The Case Study Hypothesis

The example of Eisenhower and Spaatz, their professional relationship was demonstrably positive and therefore proves the null hypotheses that there were other factors that contributed to the delayed implementation of Spaatz's oil plan. Both men were good friends and yet did not allow that friendship to interfere with command decision-making processes (i.e. giving Spaatz's plan preferential treatment because of friendship). Eisenhower, as the SHEAF Commander, therefore, was able to weigh the strategic needs of his American commanders alongside the needs of the British commanders to help ensure the most economic use of combat forces.

While Spaatz's oil plan was generally accepted as an effective strategy, it was not initially dismissed due to a personality conflict, but rather for legitimate assessment of strategy and timeline. The one major factor for delaying Spaatz's oil plan was the demand placed on Eisenhower to ensure as great a benefit to the invasion force for Operation OVERLORD as possible. It was determined by a team of analysts that

Spaatz's plan would not provide as much benefit to the invasion force in time for D-Day. As OVERLORD was the prime objective, Eisenhower chose the plan that would provide the greatest benefit to that goal. Once the beachhead at Normandy was established, Eisenhower allowed Spaatz to take the fight to the German oil industry.

Conclusion 3 and Further Research

Intriguingly, a personality conflict does not arise between Spaatz and Eisenhower, but rather between Spaatz and ACM Leigh-Mallory – an Allied partner nation commander. This finding brings up a proposal for further research: this study focused predominately on the relationship of a superior and subordinate commander, but the next stage of research should focus on equivalent-level commanders and the relationship of commanders in the same rank separated by positional authority.

APPENDIX A: **Why Target German Oil and Power?**

It would be prudent to understand the reasons behind why Spaatz so vehemently supported a plan to target the German oil industry; a main reason to target the German oil and power industries was the reliance of German industry on fuel and power. While it proved futile to demolish factories that were building war machines, if there was no gas for the planes, tanks, and other vehicles, they could not operate. An important factor to this idea of targeting oil is to understand that Germany was not rich in crude oil and therefore had to import almost all of its crude oil – making oil very costly and resulting in no real stockpiles or domestic sources of oil even before a wartime environment[54]. Because Germany lacked any sizable source of crude oil, it imported the majority of its crude oil from fields in Romania[55]. McArthur points out that, "Only 23% of the oil produced in Germany itself was crude oil[56]." By extrapolation, 77% of German oil was synthetic. This condition also led the Germans to charge forward with synthetic oil production from coal, of which Germany had in relative abundance.

The Germans had two potential processes in order to produce synthetic oil: the Fischer-Tropsch method and hydrogenation. Most pertinent to the CBO and its efforts to cripple the Luftwaffe, hydrogenation plants should have been the greatest focus. Major hydrogenation plants were located at "…Leuna, Bohlen, and Gelsenberg… Magdeburg, Lutzkendorf, Zeitz… and Politz[57]." Table 38, from the United States Strategic Bombing

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[54] Olson, Mancur. 1962. "The Economics of Target Selection for the Combined Bomber Offensive." *Royal United Services Institution. Journal* 107 (628): 308-314. doi:10.1080/03071846209428669. https://search.proquest.com/docview/1305571267., 313

[55] Milward, Alan S. 1965. *The German Economy at War*. London: University of London, Athlone Press.,118

[56] MacArthur, Charles W. 1992. *Operations Analysis in the US Army Eighth Air Force in World War II*. History of Mathematics. 2. print. ed. Vol. 4. Providence, R.I: American Mathematical Soc. u.a., 203

[57] MacArthur, Charles W. 1992. *Operations Analysis in the US Army Eighth Air Force in World War II*. History of Mathematics. 2. print. ed. Vol. 4. Providence, R.I: American Mathematical Soc. u.a., 203

Survey (Figure 2b), shows that in the first quarter of 1944, hydrogenation was responsible for producing 503 metric tons of aviation fuel[58]. The implication of this number lies with the "Total from all sources" block: 546 metric tons. This means that hydrogenation was responsible for 92.12% of all German aviation fuel. The Survey goes on to state, "Requirements were estimated by the Luftwaffe during early 1943 at 250,000 tons per month, and this appears to be a reasonable figure in the light of earlier consumption. With no prospect of obtaining this amount, requirements were reduced in August to 195,000 tons with the statement that absolute minimum requirements were 170,000 tons[59]."

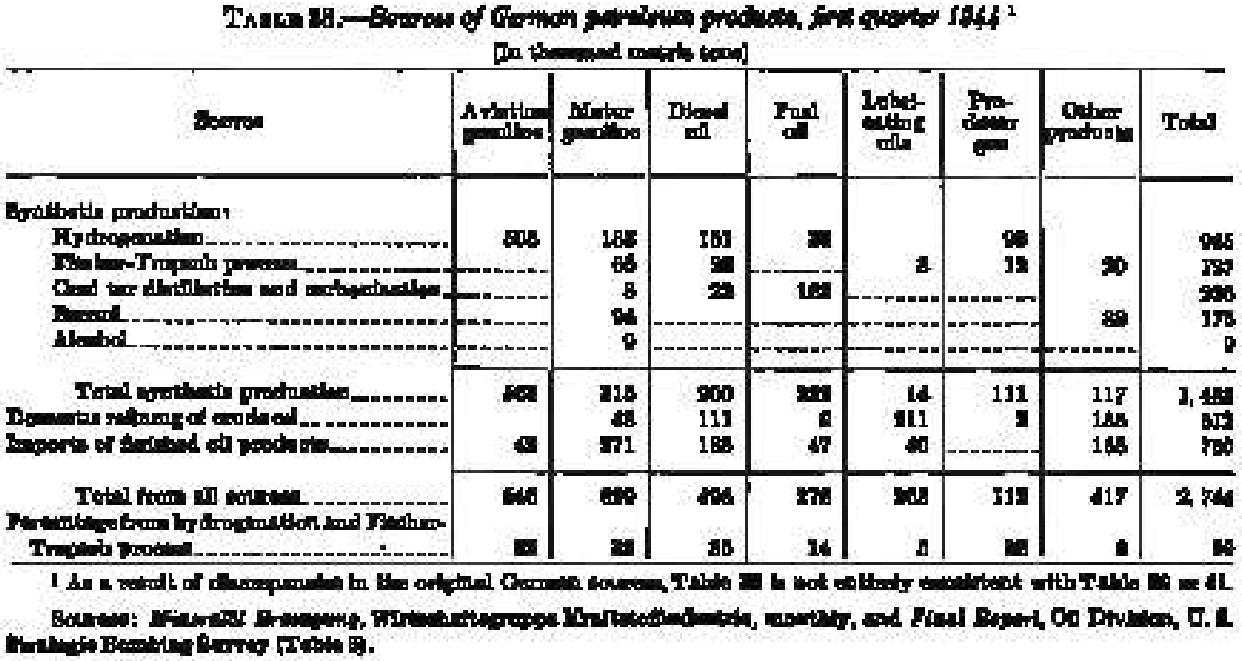

TABLE 28.—Sources of German petroleum products, first quarter 1944 [1]

[In thousand metric tons]

Source	Aviation gasoline	Motor gasoline	Diesel oil	Fuel oil	Lubricating oils	Propellent gas	Other products	Total
Synthetic production:								
Hydrogenation	503	168	151	38		90		945
Fischer-Tropsch process		65	28		2	13	20	737
Coal tar distillation and carbonization		8	23	168				200
Benzol		94					82	176
Alcohol		9						9
Total synthetic production	503	315	200	206	14	111	117	1,488
Domestic refining of crude oil		48	111	6	211	2	186	572
Imports of finished oil products	43	271	188	47	40		165	756
Total from all sources	546	634	496	278	265	113	417	2,744
Percentage from hydrogenation and Fischer-Tropsch process	92	28	35	14	5	95	6	56

[1] As a result of discrepancies in the original German sources, Table 28 is not entirely consistent with Table 26 or 41.

Sources: Mineralöl Bewegung, Wirtschaftsgruppe Mineralölindustrie, monthly, and *Final Report*, Oil Division, U. S. Strategic Bombing Survey (Table 9).

Figure 3

[58] United States Strategic Bombing Survey. 1945. *The Effects of Strategic Bombing on the German War Economy*. Its Reports. European War. 3. Washington: Over-all Economic Effects Division., 76

[59] United States Strategic Bombing Survey. 1945. *The Effects of Strategic Bombing on the German War Economy*. Its Reports. European War. 3. Washington: Over-all Economic Effects Division., 77

What this suggests is that even by 1943 the Luftwaffe understood that its fuel demands were unsustainable, and rationing was necessary. This fact alone should have been a bigger factor in making oil refineries and facilities a strategic target.

Hydrogenation produced predominately aviation fuel; the other method, the Fischer-Tropsch process, was instrumental in providing synthetic diesel and other fuel. Therefore, it would have been foolish to *not* target both methods of synthetic oil production. While a major focus area of the CBO was to cripple the Luftwaffe, the intent was to curtail the German ability to field battlefield resources and machines. The only thing Fischer-Tropsch oil needed was an additive of benzene[60] to create lower-grade, but still very functional, diesel. This oil was also used in other production processes like rubber[61]. Harris speaks to the British economic analysts whom referred to synthetic oil plants as "Pangaea" targets:

> Ever since the beginning of the war these had been the favourite targets of the Ministry of Economic Warfare. They were, indeed, the most important and most persistently recommended of a whole class of objectives which at Bomber Command we always called "panacea" targets. These were targets which were supposed by the economic experts to be such a vital bottleneck in the German war industry that when they were destroyed the enemy would have to pack up[62].

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[60] Parramore, Woody W. 2012. "The Combined Bomber Offensive's Destruction of Germany's Refined-Fuels Industry." *Air & Space Power Journal* 26 (2): 72. https://search.proquest.com/docview/1115581072., 76

[61] Parramore, Woody W. 2012. "The Combined Bomber Offensive's Destruction of Germany's Refined-Fuels Industry." *Air & Space Power Journal* 26 (2): 72. https://search.proquest.com/docview/1115581072., 76

[62] Harris, Arthur. 2015. *Bomber Offensive : Marshal of the R.A.F Sir Arthur Harris*. Havertown: Pen and Sword. https://ebookcentral.proquest.com/lib/[SITE_ID]/detail.action?docID=1718460., 220

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CURRICULUM VITAE

Andrew Baldwin was born on 15 May 1989 and was raised in Levittown, Pennsylvania where he graduated from Harry S. Truman High School in 2007. He attended his alma mater, Lynchburg College (now University of Lynchburg), and graduated in 2011 with a BA in Theatre and a double minor in International Relations and History. He then enlisted as an Airborne Intelligence Operator in the United States Air Force for six years and left Active Duty with an Honorable Discharge.